

SENGUNTHAR ENGINEERING COLLEGE (AUTONOMOUS) (Approved by AICTE, New Delhi & Affiliated to Anna University. Chennal) Recognized Under Section 2(1) & 12(B) of the UGC Act, 1956 NAAC Accredited with 'A' Grade TIRUCHENGODE - 637 205 NAMAKKAL (Dt) TAMILNADU



08.07.2020

Professional Development Programme Schedule

Professional Development Programmes are strived to upgrade and update the knowledge of faculties in different fields of their specialization. The objective of the courses is to enlighten the faculties about the contemporary developments in their subjects and also to provide an understanding about the emerging areas of research.

The Professional Development Programmes for the academic year 2020-2021 are planned as per the following schedule:

For Teaching Faculty :

S.No	Name of the Event	Schedule	
1.	ICT Tools for Online Teaching	July 2020	
2.	National Educational Policy	September 2020	
3.	Outcome based Education	November 2020	
4.	Examination Reforms	February 2021	
5.	IPR and Patent Filing	March 2021	

For Non-Teaching Faculty:

S.No	Name of the event	Schedule
1.	Safety Precautions	November 2020
2.	Computer Hardware Maintenance	November 2020
3.	Laboratory Equipment Care and Maintenance	November 2020

Copy submitted to the Correspondent, SEC

Copy to:

- 1. All HoDs
- 2. IQAC
- 3. File



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APPROVAL FORM

Form No.: SEC/2020-2021/01

Date: 08.07.2020

Organizing Department/Cell	CIVIL, N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.	Program Date	10.07.2020
Programme Title	ICT Tools for Online Teac	hing	
	Name	Address	Contact Details
Resource Person	Dr. R. Shanmugam, Ph.D.,	Associate Professor, Civil Department, Sengunthar Engineering College, Tiruchengode - 637205.	9443216655
Participants	Department	Total	Total participants
Faculties	Civil, Mech, ECE, EEE, CSE & MBA	50	50
Coordinators	 Mr.S.Prabu, AP/Civil Mr. N.Thiru Senthil Adhiban, AP/Mech Mr.N.Saravanan, AP/Mech One of the main aims of ICT is to help students to become competent and confident users who can use the basic knowledge and skills acquired to assist them in their daily lives. It is also supposed to prepare students for the world of tomorrow. It aims to help learners to have an open and flexible mind. 		
Objective of the Activity			
Outcome of the Activity	There is widespread belief that ICTs can and will empower teachers and learners, transforming teaching and learning processes from being highly teacher-dominated to student-centered, and that this transformation will result in increased learning gains for students, creating and allowing for opportunities for learners		
Coordinator of the Programme	Mr.S.Prabu, AP/Civil		

BUDGET PROPOSAL

Particulars	Description	Amount in Rs.	
	Resources Person(s)		
Design from the second states	Refreshment	-	
Recurring Expenditure	Travelling Allowance	Nil	
	Other Expenses		
Non Recurring Expenditure	Items to be Purchased	1	
	Total		

8/7/2020

Coordinator

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DEPARTMENT OF CIVIL ENGINEERING

in association with

N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.





Professional Development Program

On

"ICT Tools for Online Teaching"

on 10.07.2020 at 12.30 p.m.

Resource Person



Dr. R. Shanmugam, Ph.D.,

Associate Professor/Civil Dept, Sengunthar Engineering College, Tiruchengode - 637205.

Meet Link: https://meet.google.com/nzs-jowx-vcp





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TIRUCHENGODE - 637 205 NAMAKKAL (Dt) TAMILNADU

Report

Organizing Department/Cell	Civil Engineering	Programme Date	10.07.2020
Programme Title	"ICT Tools for Online Teach	ning"	
	Name	Address	Contact Details
Resource Person	Dr. R. Shanmugam, Ph.D.,	Associate Professor, Civil Department, Sengunthar Engineering College, Tiruchengode - 637205.	9443216655
Objective of the Activity	One of the main aims of ICT is to help students to become competent and confident users who can use the basic knowledge and skills acquired to assist them in their daily lives. It is also supposed to prepare students for the world of tomorrow. It aims to help learners to have an open and flexible mind.		
Outcome of the Activity	There is widespread belief that ICTs can and will empower teachers and learners, transforming teaching and learning processes from being highly teacher-dominated to student-centered, and that this transformation will result in increased learning gains for students, creating and allowing for opportunities for learners		
Coordinator of the Prog	gramme Mr.S.Prabu, A	AP/Civil	

Department of Civil Engineering, Sengunthar Engineering College organized a Professional Development Program on "ICT Tools for Online Teaching" on 10th July 2020 at 12:30 pm. The speaker of the webinar was our department Associate Professor Dr. R. Shanmugam, Ph.D. The webinar was organized under the guidance of Dr.C.Venkatesh, Principal - Sengunthar Engineering College. Then, Mr.S.Prabu, AP/Civil welcomed all participants.

The main focus for the webinar was technology and access to learning opportunities for learners with disabilities during COVID-19, and beyond. ODL is a broad term that embraces online learning, e-learning, distance education, correspondence education, external studies, flexible learning, and the massive open online courses (MOOCs) movement. The primary objective was to present key findings and recommendations related to the implementation of technology-enabled ODL initiatives in order to explore ways to enhance future initiatives. Following these presentations, panellists answered key questions and discussed lessons learned during the pandemic, along with their recommendations for future programs.

Dr.R.Shanmugam emphasized the need for cost-effective, accessible, affordable, and scalable technologies. In this context, he also addressed the issue of collective intelligence and scalable actions that can be structured on pre-existing technologies and experiences, noting that stakeholder focus should be on translating policies into action - a process that must be monitored and evaluated.

Around 45 faculty members are attended the webinar and enjoyed very much.





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APPROVAL FORM

Form No.: SEC/2020-2021/01

Date: 01.09.2020

Organizing Department/Cell	MECH, N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.	Programme Date	03.09.2020
Programme Title	National Educational Pol	icy	
2	Name	Address	Contact Details
Resource Person	Dr. M. Selvakumar HoD/ Mech	Sengunthar Engineering College (Autonomous), Tiruchengode - 637205.	9443916275
Participants	Departments	Total	Total participants
Faculty	All Departments	75	75
Coordinators	Mr.C. Ramesh Kumar, AP/Mech Mr. N.Thiru Senthil Adhiban, AP/Mech Mr.C. Mohankumar, AP/Mech Mr.N.Saravanan, AP/Mech To access free, safe, high quality education for students.		
Objective of the Activity			
Outcome of the Activity	To understand the new education policy To find out for high quality education system To access free education system To acquire safe education system		
Coordinator of the Programme	Mr.C. Ramesh Kumar, AP/Mech		

BUDGET PROPOSAL

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Particulars	Description	Amount in Rs.
	Resources Person(s)	
Beauting Expanditure	Refreshment	
Recurring Expenditure	Travelling Allowance	
	Other Expenses	– Nil
Non Recurring Expenditure	Items to be Purchased	-
	Total	

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DEPARTMENT OF MECHANICAL ENGINEERING

in association with

N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.



Professional Development Program

On

"National Educational Policy"

on 03.09.2020 at 11.00 a.m.

Resource Person



Dr. M. Selvakumar, HoD/ Mechanical Engineering, Sengunthar Engineering College, Tiruchengode - 637205.

Meet Link: https://meet.google.com/szk-ayvd-fqj





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National Educational Policy

Report

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. Universal high – quality education is the best way forward for developing and maximizing our country's rich talents and resources for the good of the individual, the society, the country, and the world. India will have the highest population of young people in the world over the next decade, and our ability to provide high – quality educational opportunities to them will deter mine the future of our country.

The global education development agenda reflected in the Goal 4(SDG4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015-seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"by2030.Such a lofty goal will require the entire education system to beer configured to support and foster learning, so that all of the critical targets and goals (SDGs) of the 2030 Agenda for Sustainable Development can be achieved.

The world is undergoing rapid changes in the knowledge landscape. With various dramatic scientific and technological advances, such as the rise of big data, machine learning, and artificial intelligence, many unskilled jobs worldwide may be taken over by machines, while the need for a skilled workforce, particularly involving mathematics, computer science, and data science, in conjunction with multidisciplinary abilities across the sciences, social sciences, and humanities, will be increasingly in greater demand. With climate change, increasing pollution, and depleting natural resources, there will be a sizeable shift in how we meet the world's energy, water, food, and sanitation needs, again resulting in the need for new skilled labour, particularly in biology, chemistry, physics, agriculture, climate science, and social science. The growing emergence of epidemics and pandemics will also call for collaborative research in infectious disease management and development of vaccines and the resultant social issues heightens the need for multidisciplinary learning. There will be a growing demand for humanities and art, as India moves towards becoming a developed country as well as among the three largest economies in the world.

Indeed, with the quickly changing employment landscape and global ecosystem, it is becoming increasingly critical that children not only learn, but more importantly learn how to learn. Education thus, must move towards less content, and more towards learning about how to think critically and solve problems, how to be creative and multidisciplinary, and how to innovate, adapt, and absorb new material in novel and changing fields. Pedagogy must evolve to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centered, discussion-based, flexible, and, of course, enjoyable. The curriculum must include basic arts, crafts, humanities,

games, sports and fitness, languages, literature, culture, and values, in addition to science and mathematics, to develop all aspects and capabilities of learners; and make education more well-rounded, useful, and fulfilling to the learner, Education must build character, enable learners to be ethical, rational, compassionate, and caring, while at the same time prepare them for gainful, fulfilling employment.

The gap between the current state of learning outcomes and what is required must be bridged through undertaking major reforms that bring the highest quality, equity, and integrity into the system, from early childhood care and education through higher education.

The aim must be for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of social or economic background.

This National Education Policy 2020 is the first education policy of the 21" century and aims to address the many growing developmental imperatives of our country. This Policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspiration goals of 21" century education, including SDG4, while building upon India's traditions and value systems. The National Education Policy lays particular emphasis on the development of the creative potential of each individual. It is based on the principle that education must develop not only cognitive capacities - both the foundational capacities of literacy and numeracy and higher-order' cognitive capacities, such as critical thinking and problem solving - but also social, ethical, and emotional capacities and dispositions.

The teacher is at centre the fundamental reforms in the education system. The education policy must re-establish teachers, all levels, the most respected and essential members of our because they truly shape our next generation of citizens. Must everything to empower teachers and help them to their job as effectively possible. The new education policy help recruit very and brightest enter the teaching profession at levels, by ensuring livelihood, respect, dignity.

The new education policy must provide to all students, irrespective of their place of residence, a quality education system, with particular focus on historically marginalized, disadvantaged, and underrepresented groups. Education is a great leveler and is the best tool for achieving economic and social mobility, inclusion, and equality. Initiatives must be in place to ensure that all students from such groups, despite inherent obstacles, are provided various targeted opportunities to enter and excel in the educational system.

These elements must be incorporated taking into account the local and global needs of the country and with a respect for and deference to its rich diversity and culture. Instilling knowledge of India and its varied social, cultural, and technological needs, its inimitable artistic, language, and knowledge traditions, and its strong ethics in India's young people is considered critical for purposes of national pride, self-confidence, self-knowledge, cooperation, and integration.







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SEC IQAC is presenting	
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APPROVAL FORM

Form No.: SEC/2020-2021/01

Date: 14.10.2020

Organizing Department/Cell	MECH, EDC, SEC-IIC.	Programme Date	16.10.2020
Programme Title	Outcome Based Education		
	Name	Address	Contact Details
Resource Person	Dr. C. AARTHI, Ph.D.,	HOD/ECE Sengunthar Engineering college(Autonomous)	Dr. C. AARTHI, Ph.D 9842362026
Participants	Departments	Total	Total participants
Faculty	All Departments	100	100
Coordinators	Mr. N. Thiru Senthil Adhiba	n, AP/Mech	
Objective of the Activity	Outcome-based education is a model of education that rejects the traditional focus on what the school provides to students, in favor of making students.		
Outcome of the Activity	Clarity of focus on culminating outcomes of significance		
Coordinator of the Programme	Mr.V.Gowthaman AP/ECE		

BUDGET PROPOSAL

Particulars	Description	Amount in Rs.	
	Resources Person(s)		1
E	Refreshment		
Recurring Expenditure	Travelling Allowance		
	Other Expenses	- Nil	
Non Recurring Expenditure	Items to be Purchased		
	Total		1.00

14.10.2020

Coordinators

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Department of Electronics and Communication Engineering

in association with

N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.









INSTITUTION'S INNOVATION COUNCIL (Ministry of Education Initiative)

Professional Development Program

On

"OUTCOME BASED EDUCATION "

on 16.11.2020 at 12.30 p.m.

Resource Person



Dr. C. AARTHI, Ph.D.,

HOD/ECE Dept, Sengunthar Engineering College, Tiruchengode - 637205.

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Meet Link: meet.google.com/jsw-apfc-geg



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OUTCOME BASED SYSTEM

Outcome Based Education (OBE) & Continuous Quality Improvement (CQI)

PRESENTED BY

Dr.C.AARTHI HOD/ECE

Sengunthar Engineering College(Autonomous), Tiruchengode.





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Report

S.No	Date	Name of the activity	Place of activity
	16 10 0000	OUTCOME BASED	
1	16.10.2020	EDUCATION	ONLINE

ABOUT OUTCOME BASED EDUCATION

The program outcomes are mainly **achieved through the curriculum**. Student activities in student professional organizations augment the curriculum in achieving the stated outcome. The Accreditation Committee has identified a set of tools to monitor student progress in achieving the outcomes"

Objective

1 an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. Learning objectives can include 3 components

The performance statement describes what the learner will know or be able to do in specific, measurable terms. The statement should contain an action verb.

This day was celebrated Webinar was conducted though online . Around 125 students participated in the program. This endeavor aimed at creating awareness among the students on the importance of literacy and education for the well being of the society.



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APPROVAL FORM

Form No.: SEC/2021-2022/01

Date: 09.02.2021

Organizing Department/Cell	EEE &SEC-IIC.	Programme Date	10.02.2021	
Programme Title	EXAMINATION REF	ORM		
Resource Person	Name	Address	Contact Details	
Resource Person	Dr. K.Umadevi	SEC	9443035709	
Participants	Branch / Class / Section	Total	Total participants	
Faculty	All Departments 30 30			
Coordinators	Mr. A.Tamil selvan, AP/EEE Mr.V.Nanthakumar, AP/EEE Ms.E.Sivarupini, AP/English Ms.V.Nandhene, AP/Maths			
Objective of the Activity	To adopt innovative methodologies			
Outcome of the Activity	Improving the structure and quality of assessment			
Coordinator of the Programme	Mr. A.Tamil selvan, AP/EEE			

BUDGET PROPOSAL

Particulars	Description	Amount in Rs.
Recurring Expenditure	Resources Person(s)	
	Refreshment	
	Travelling Allowance	
	Other Expenses	Nil
Non Recurring Expenditure	Items to be Purchased	
	Total	

Nother

Coordinators

Principal

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TIRUCHENGODE - 637 205 NAMAKKAL (Dt) TAMILNADU

Cordially invites you to the

EXAMINATION REFORM

On

10.02.2021 at 03:00p.m.

Resource Person:



Dr. K.Umadevi Planning & Development, SEC

Google MeetLink:

https://meet.google.com/isc-hqjq-hfa





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TIRUCHENGODE - 637 205 NAMAKKAL (Dt) TAMILNADU DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Professional Development Program On

EXAMINATION REFORM

REPORT

Date: 10.02.2021

General

AICTE'S Examination Reform Policy, intends to push the evaluation notch up on the Bloom's taxonomy and examine the learner for higher order cognitive skills to motivate for critical thinking, creativity and problem solving abilities that leads to acquire quality of technical professional. With this policy implementation AICTE aimed to align them in the teaching-learning processes and bridging the gaps between theory and practical components.

AICTE has recommended the technical institutions and universities in the country to adopt the exam reform policy. The report AICTE's Examination reform policy 2018 states: The important drivers for reforms in examination system of Indian engineering education are: (i) Adaptation of outcome based Education (OBE) — performance based education the country that wants to be a signatory member of a multinational agreement for the mutual recognition of engineering degrees, i.e. the Washington Accord (WA) must implement OBE. This will be an endorsement that the engineering education system has demonstrated a strong, long-term commitment to quality assurance in producing engineers ready for industry practice in the international scene.

Being signatory to the Washington Accord, Indian accreditation agency 'National Board of Accreditation (NBA)' has made it mandatory for engineering institutions to adapt OBE framework for their curriculum design, delivery and assessment. The reference papers and material to understand and enforce the recommendations suggested i.e(i) to design Curriculum (ii) design courses and syllabus which align with POs and PSOs. (iii) Develop Learning Objectives for each chapter and develop Course Objectives for each course using Bloom's taxonomy (iv) write Course Outcomes for every course (v) design question paper using bloom's taxonomy, top outcome COs) aligning with PI (Performance Indicators). We except that such activities will continuously be held at our campus.

SCREEN SHOT







SENGUNTHAR ENGINEERING COLLEGE (AUTONOMOUS) (Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai) Recognized Under Section 2(f) & 12(B) of the UGC Act, 1956 NAAC Accredited with 'A' Grade TIRUCHENGODE - 637 205 NAMAKKAL (Dt) TAMILNADU



APPROVAL FORM

Form No.: SEC/2021-2022/01

Date: 17.03.2021

Organizing Department/Cell	CSE &SEC-IIC.	Programme Date	21.03.2021
Programme Title	IPR and Patent Filing		
	Name	Address	Contact Details
Resource Person	Dr. M.Sakthivel HoD/CSE	SEC	8248750448
Participants	Branch / Class / Section	Total	Total participants
Faculty	All Departments	60	60
Coordinators	Mr.K.Ashok Kumar,AsP/CSE		
Objective of the Activity	To Give awareness and importance about IPR and about Pattern Filing		
Outcome of the Activity	Faculty understanding concepts of IPR and Clear understanding about Pattern Filing		
Coordinator of the Programme	Mr.K.Ashok Kumar,AsP/CS		

BUDGET PROPOSAL

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Particulars	Description	Amount in Rs.
Recurring Expenditure	Resources Person(s)	_
	Refreshment	
	Travelling Allowance	Nil
	Other Expenses	
Non Recurring Expenditure	Items to be Purchased	
	Total	

Coordinators

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

in association with

N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.







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INSTITUTION'S INNOVATION COUNCIL (Ministry of Education Initiative)

Celebration of the

"IPR and Patent Filing"

On 21.03.2021 at 11.00 a.m.

Resource Person



Dr.M.SAKTHIVEL Ph.D., HoD & Associate Professor/CSE, Sengunthar Engineering College (Autonomous), Tiruchengode-637205 Meet Link: meet.google.com/fmq-xqce-gpn









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TIRUCHENGODE - 637 205 NAMAKKAL (Dt) TAMILNADU

Report

Organizing Department/Cell	Computer Science Engineering	Programme Date	21.03.2021
Programme Title	"IPR and Patent Filing"		
	Name	Address	Contact Details
Resource Person	Dr. M.Sakthivel HOD/CSE	Associate Professor, CSE Department, Sengunthar Engineering College, Tiruchengode - 637205.	8248750448
Objective of the Activity	To Give awareness and importance about IPR and about Pattern Filing		
Outcome of the Activity	Faculty understanding concepts of IPR and Clear understanding about Pattern Filing		
Coordinator of the Programme Mr.K.Ashok Kumar,AP/CSE			

Department of CSE Engineering, Sengunthar Engineering College organized a Professional Development Program on "IPR and Patent Filing" on 21th March 2021 at 11:00 a.m. The speaker of the webinar was our department Associate Professor Dr. M. Sakthivel, Ph.D. The webinar was organized under the guidance of Dr.C.Venkatesh, Principal - Sengunthar Engineering College. Then, Mr.K.Ashok Kumar, AP/CSE welcomed all participants.

The main focus for the webinar on intellectual property law is to encourage the creation of a wide variety of intellectual goods. To achieve this, the law gives people and businesses property rights to the information and intellectual goods they create, usually for a limited period of time. This gives economic incentive for their creation, because it allows people to benefit from the information and intellectual goods they create, and allows them to protect their ideas and prevent copying. These economic incentives are expected to stimulate innovation and contribute to the technological progress of countries, which depends on the extent of protection granted to innovators

Intellectual property rights include patents, copyright, industrial design rights, trademarks, plant variety rights, trade dress, geographical indications, and in some jurisdictions trade secrets. A patent is a form of right granted by the government to an inventor or their successor-in-title, giving the owner the right to exclude others from making, using, selling, offering to sell, and importing an invention for a limited period of time, in exchange for the public disclosure of the invention. An invention is a solution to a specific technological problem, which may be a product or a process and generally has to fulfill three main requirements: it has to be new, not obvious and there needs to be an industrial applicability. To enrich the body of knowledge and stimulate innovation, it is an obligation for patent owners to disclose valuable information about their inventions to the public.

Around 60 faculty members are attended the webinar and enjoyed very much.



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APPROVAL FORM

Form No.: SEC/2020-2021/02

Date: 16.11.2020

Organizing Department/Cell	MECH, N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.	Programme Date	18.11.2020
Programme Title	Safety Precautions		
	Name	Address	Contact Details
Resource Person	Dr. M. Selvakumar HoD/ Mech	Sengunthar Engineering College (Autonomous), Tiruchengode - 637205.	9443916275
Participants	Departments	Total	Total participants
Faculty	All Departments	30	30
Coordinators	Mr.C. Ramesh Kumar, AP/Mech Mr. N.Thiru Senthil Adhiban, AP/Mech Mr.C. Mohankumar, AP/Mech Mr.N.Saravanan, AP/Mech		
Objective of the Activity	Preservation of and assistance for employees' or workers' health and well-being. Enhancing workability of employees by ensuring a safe and congenial work environment. Growth of the organization that remains free from prospective hazards and mishaps.		
Outcome of the Activity	It may be possible to reduce risk by replacing materials, chemicals, equipment or methods with something that is less hazardous.		
Coordinator of the Programme	Mr.C. Ramesh Kumar, AP/Mech		

BUDGET PROPOSAL

Particulars	Description	Amount in Rs.	
Recurring Expenditure	Resources Person(s)		
	Refreshment	N11	
	Travelling Allowance		
	Other Expenses	- Nil	
Non Recurring Expenditure	Items to be Purchased		
	Total	-	

20 16/11/20 Coord tors 1,120

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76.11, 2020.

Correspondent

SENGUNTHAR Shrine 2 Success



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TIRUCHENGODE - 637 205 NAMAKKAL (Dt) TAMILNADU

DEPARTMENT OF MECHANICAL ENGINEERING

in association with

N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.





Professional Development Program

On

"Safety Precautions"

on 18.11.2020 at 11.30 a.m.

Resource Person



Dr. M. Selvakumar, HoD/ Mechanical Engineering, Sengunthar Engineering College, Tiruchengode - 637205.

Meet Link: https://meet.google.com/hua-ebxj-sca





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Safety Precautions

Report

A standard list of basic laboratory safety rules are given below, and must be followed in every laboratory that uses hazardous materials or processes. These basic rules provide behavior, hygiene, and safety information to avoid accidents in the laboratory. Laboratory specific safety rules may be required for specific processes, equipment, and materials, which should be addressed by laboratory specific SOPs.

Basic Safety Rules

Basic safety rules for laboratory conduct should be observed whenever working in a laboratory. Many of the most common safety rules are listed below.

- Know locations of laboratory safety showers, eye wash stations, and fire extinguishers. The safety equipment may be located in the hallway near the laboratory entrance.
- Know emergency exit routes.
- Avoid skin and eye contact with all chemicals.
- Minimize all chemical exposures.
- No horseplay will be tolerated.
- Assume that all chemicals of unknown toxicity are highly toxic.
- Post warning signs when unusual hazards, hazardous materials, hazardous equipment, or other special conditions are present.
- Avoid distracting or startling persons working in the laboratory.
- Use equipment only for its designated purpose.
- Combine reagents in their appropriate order, such as adding acid to water.
- Avoid adding solids to hot liquids.
- All laboratory personnel should place emphasis on safety and chemical hygiene at all times.
- Never leave containers of chemicals open.
- All containers must have appropriate labels. Unlabeled chemicals should never be used.
- Do not taste or intentionally sniff chemicals.
- Never consume and/or store food or beverages or apply cosmetics in areas where hazardous chemicals are used or stored.
- Do not use mouth suction for pipefitting or starting a siphon.
- Wash exposed areas of the skin prior to leaving the laboratory.
- Long hair and loose clothing must be pulled back and secured from entanglement or potential capture.
- No contact lenses should be worn around hazardous chemicals even when wearing safety glasses.
- Laboratory safety glasses or goggles should be worn in any area where chemicals are used or stored. They should also be worn any time there is a chance of splashes or particulates to

enter the eye. Closed toe shoes will be worn at all times in the laboratory. Perforated shoes or sandals are not appropriate.

- Determine the potential hazards and appropriate safety precautions before beginning any work.
- Procedures should be developed that minimize the formation and dispersion of aerosols.
- If an unknown chemical is produced in the laboratory, the material should be considered hazardous.
- Do not pour chemicals down drains. Do NOT utilize the sewer for chemical waste disposal.
- Keep all sink traps (including cup sink traps and floor drains) filled with water by running water down the drain at least monthly.
- Do not utilize fume hoods for evaporations and disposal of volatile solvents.
- Perform work with hazardous chemicals in a properly working fume hood to reduce potential exposures.
- Avoid working alone in a building. Do not work alone in a laboratory if the procedures being conducted are hazardous.
- The PEL and the Threshold Limit Values (TLV) will be observed in all areas. If exposure above a PEL/TLV is suspected for an ongoing process, please contact EHS immediately.
- Laboratory employees should have access to a chemical inventory list, applicable SDSs, Department Laboratory Safety Manual, and relevant SOPs.
- Access to laboratories and support areas such as stockrooms, specialized laboratories, etc. should be limited to approved personnel only.
- All equipment should be regularly inspected for wear or deterioration.
- Equipment should be maintained according to the manufacturer's requirements and records of certification, maintenance, or repairs should be maintained for the life of the equipment.
- Designated and well-marked waste storage locations are necessary.
- No cell phone or ear phone usage in the active portion of the laboratories, or during experimental operations.
- Clothing made of synthetic fibers should not be worn while working with flammable liquids or when a fire hazard is present as these materials tend to melt and stick to exposed skin.
- Laboratory coats should not be stored in offices or break rooms as this spreads contaminates to other areas.
- Computers and instrumentation should be labeled to indicate whether gloves should be worn or not. Inconsistent glove use around keyboards/keypads is a source of potential contamination.
- Avoid wearing jewelry in the lab as this can pose multiple safety hazards.



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Dr.M. Selvakumar HoD / Mech is presenting		
ENVIRONMENTAL CONTROL	MURALIKRISHNAN T	J JEEVANANDHAM V
• Ensure that the health service has adequate procedures for the routine care, cleaning and disinfection of environmental surfaces, beds, bedrails, bedside equipment and other frequently touched surfaces, and that these	KARTHICK S	
 Use adequate procedures for the routine cleaning and disinfection of environmental and other frequently 	KAVINRAJ BHUVANESHW	K Dr.M. Selvakumar HoD / M
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APPROVAL FORM

Form No.: SEC/2020-2021/02

Date: 23-11-2020

Organizing Department/Cell	CSE, Y.R.C, R.R.C, N.S.S, N.C.C, SEC-IIC, UBA.	Programme Date	25-11-2020
Programme Title	COMPUTER HARDWARE MAINTENANCE		
	Name	Address	Contact Details
Resource Person	Dr.M.SAKTHIVEL. HOD/CSE	SENGUNTHAR ENGINEERING COLLEGE, THIRUCHENGODE	9842213273
Participants	Branch / Class / Section	Total	Total participants
Faculty	All Departments	30	30
Coordinators	Mr. K.ASHOKKUMAR, ASP/CSE Dr. S.RADHA, AP/CSE		
Objective of the Activity	The objective of this Computer Hardware Maintenance is to provide the participant much needed knowledge of computer hardware and networking		
Outcome of the Activity	The outcome of this course is to provide of enabling them to identify and rectify the onboard computer hardware, software and network related problems and acquire the knowledge on hardware troubleshooting.		
Coordinator of the Programme	Mr. K.ASHOKKUMAR, ASP/CSE		

BUDGET PROPOSAL

Particulars	Description	Amount in Rs.
Recurring Expenditure Non Recurring Expenditure	Resources Person(s)	
	Refreshment	7
	Travelling Allowance	
	Other Expenses	- Nil -
	Items to be Purchased	1
<u> </u>	Total	1

23/11/2020 11/2020 23 Coordinators

 \mathbb{N} 2020 111 23 Principal

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TIRUCHENGODE - 637 205 NAMAKKAL (Dt) TAMILNADU

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

in association with

N.C.C, N.S.S, Y.R.C, R.R.C, SEC-IIC.





Celebration of the

"COMPUTER HARDWARE MAINTENANCE"

On 25.11.2021 at 11.00 a.m.

Resource Person



Dr.M.SAKTHIVEL Ph.D., HoD & Associate Professor/CSE, Sengunthar Engineering College (Autonomous), Tiruchengode-637205 Meet Link: meet.google.com/fmq-xqce-gpn



COMPUTER HARDWARE MAINTANANCE









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APPROVAL FORM

Form No.: SEC/2021-2022/01

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Date: 22.11.2021

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Organizing Department/Cell	ECE, EEE,SEC-IIC	Programme Date	23.11.2021
Programme Title	Laboratory Equipment Car	e and Maintenance	
Resource Person	Name	Address	Contact Details
Resource Person	Dr. C. AARTHI, Ph.D.,	SEC	9842362026
Participants	Branch / Class / Total Total part		Total participants
Faculty	All Departments	30	30
Coordinators	Mr. V.Gowthaman, AP/ECE Mr.V.Nanthakumar, AP/EEE Mr.A.Tamilselvan,AP/EEE		
Objective of the Activity	Developing standard operating procedures for all lab equipment.		
Outcome of the Activity	Training both technical and managerial staff on proper use and care of lab equipment.		
Coordinator of the Programme	Mr.V.Gowthaman,AP/ECE Mr.V.Nanthakumar, AP/EEE		

BUDGET PROPOSAL

Particulars	Description	Amount in Rs.
Recurring Expenditure	Resources Person(s)	
	Refreshment	
	Travelling Allowance	Nil
	Other Expenses	INII
Non Recurring Expenditure	Items to be Purchased	
	Total	

Coordinators

Principal

11,2020.

Correspondent





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Department of Electronics and Communication Engineering

&

Department of Electrical and Electronics Engineering

Professional Development Program

On

"Laboratory Equipment Care and Maintenance"

on 23.11.2020 at 12.30 p.m.

Resource Person



Dr. C. AARTHI, Ph.D.,

HOD/ECE Dept, Sengunthar Engineering College, Tiruchengode - 637205.

Meet Link: meet.google.com/jsw-apfc-geq









Department of Electronics and Communication Engineering & Department of Electrical and Electronics Engineering

Professional Development Program On "Laboratory Equipment Care and Maintenance"

REPORT

GENERAL

The care and maintenance of laboratory equipment is an integral part of quality assurance in the lab. Well-maintained lab equipment ensures that data is consistent and reliable, which in turn impacts the productivity and integrity of the work produced. Furthermore, since laboratory equipment generally takes up a big cut of the budget, good maintenance contributes to cost-cutting measures, by lowering the chances of premature repurchases and replacement. In addition, routine maintenance ensures that lab equipment is safe for use through highlighting and repair of faulty equipment and equipment parts.

Various procedures and routines will ensure that your laboratory equipment is well-maintained and cared for, this includes;

- Developing standard operating procedures for all lab equipment.
- Preparing documentation on each specific equipment, outlining the repairs and maintenance undertaken.
- Outlining a preventive maintenance program for each equipment.
- Training both technical and managerial staff on proper use and care of lab equipment.

A. Standard Operating Procedure for Maintenance of Lab Equipment

Standard operating procedures (SOPs) are a must for all complex lab equipment. This ensures that the correct use and maintenance of the equipment is integrated within routine work. Detailed instructions of equipment use should be sourced from the manufacturer's operator manual. The SOP can be written by the lab manager, an equipment officer, or staff that frequently works with the specific equipment. The SOP should also be easily accessible at the workbench.

A proper SOP should contain the following;

- The title and description of the content/scope of the SOP.
- Definitions of all abbreviations used.
- An outline of the personnel responsible for the equipment or involved in its use, including their qualifications and training requirements.

• Detailed instructions for the use of equipment, containing the do's and don'ts of operating them.

- A description of quality control and maintenance.
- Instructions on waste management, where applicable.
- **B.** Equipment Maintenance Documentation

This is a centralized collection of all the information regarding a particular equipment. It is a reference archive for equipment maintenance that can be used to understand the history of the equipment. It is usually organized by the lab manager or the lab's equipment officer. The maintenance log outlines equipment identification and descriptions like equipment name, model number, manufacturer, purchase date, warranty, model, etc as shown in **Table 1**. It also contains description of repair work, parts replacements, tests, measurements, adjustments, or deep cleaning done on the equipment.

C. Preventive Maintenance Program

A preventive maintenance program ensures that the equipment is functioning with minimal interruptions and within the manufacturer's specifications. It maximizes the equipment operational efficiency and reduces overall costs. It is mainly recommended for equipment with moving parts, gas or liquid flow, optical systems and filters. The maintenance and quality control is performed under an outlined schedule and results are documented.

A preventive maintenance file should detail;

- Error alerts on the equipment and subsequent action to be taken.
- Basic troubleshooting when the equipment malfunctions.
- Logs for error reports and failure events; see example in Table 2.

• The servicing and calibration done on the equipment and the dates for subsequent calibrations.

Stickers should be used for equipment labelling to summarize the preventive maintenance actions undertaken, the date, and the personnel involved.

D. Training Laboratory Staff on Equipment Maintenance

Training of both technical and managerial staff is not a one time activity. It should be regular with additional courses given when new equipment or improved models are bought. The initial induction training should be elaborate with an expert-guided discussion and demonstration, while follow-up training can be done in-house to refresh the staff technique. The lab manager or lab quality control officer are responsible for ensuring all staff are well trained.

For proper staff training on equipment care and maintenance;

- Provide all necessary documentation including SOPs, maintenance logs, service manuals etc.
- Ensure that the staff have, along with theoretical presentation, a practical on-the-job training on use and maintenance of lab equipment.
- Train all staff on preventive maintenance, where they learn the general care of equipment like lubrication and checking for possible damage.
- At the end of the training, a scoring system should be availed to evaluate the effectiveness of the training.

E. General Care Tips for Lab Equipment

1. Cleaning

Regular cleaning of lab equipment ensures that it is ready for use when needed, that stubborn stains/substances do not get a firm hold, and that experiments are not contaminated by impurities carried over from previous experiments.

Make certain that;

- The equipment is always cleaned before and after each use.
- Cleaning reagents and cleaning aids used are specific for laboratory equipment care.
- In addition to cleaning lab equipment before and after each use, a schedule is required for more in-depth cleaning. This might involve dissembling certain machines to clean hard-toreach parts.

2. Calibration

Calibration involves comparing the measurements of an equipment against the standard unit of measure, for the purpose of verifying its accuracy and making necessary adjustments. Regular calibration of laboratory equipment should be done because over time, biases develop in relation to the standard unit of measure. This guards against invalid data and ensures safety during experimentation. An independent specialist, that can provide calibration certificates where necessary, should be engaged in the process.

Calibration should be done when;

- The recommended time by the manufacturer elapses.
- The equipment is hit by a force, dropped on the ground, or involved in any accident or an event of safety concern.
- There are unusual patterns or sounds while the equipment is in use.
- Measurements obtained are questionable.
- Highly critical measurements, where data accuracy is of utmost importance, are to be carried out.

3. Repairs and Refurbishments

Lab equipment is generally costly and repairs and refurbishment prolong the lifespan of equipment, saving the lab the expense of new purchases.

The following are points to consider;

- Repair and/or refurbish faulty or worn out lab equipment without any delay. Faulty machines may stop working suddenly in the middle of an experiment leading to loses and they can also be a source of safety concerns.
- Minor repairs can be done by a dedicated staff, while major repairs should be directed to specialist with knowledge on the specific machine or equipment.
- Refurbish old equipment to give them a new lease of life by cleaning thoroughly, polishing where necessary, lubricating movable parts, and replacing small worn out bits.

4. Quality Replacement

Equipment that cannot be repaired or refurbished should be replaced. It is advisable to buy equipment from well known sources that can guarantee quality and offer technical support. High-quality lab equipment is easier to maintain and its durability translates to reduced costs in the long term. Non-faulty equipment that is too old should also be replaced, while some wear and tear might not be noticeable during its operation, outdated machines are not reliable and technical support in terms of servicing and acquisition of spare parts may be limited.

The care and maintenance of laboratory equipment should be a routine and embedded within the standard operating procedure of the lab. This will ensure that the life span of the equipment is prolonged and data collected within the laboratory is reliable.



